

1 WHAT IS CLAIMED IS:

2 1. A helmet having detecting tire status capability, comprising
3 a body with an opening;
4 a face guard connected pivotally to the body to cover the opening;
5 a controller in the body linked to at least one tire status detector in at
6 least one wheel wherein the controller receives at least one tire status signal from
7 the at least one tire status detector;
8 a projector mounted in the body and faced to the opening, wherein the
9 projector is connected to the controller; and
10 a power circuit is connected to the controller and the projector to supply
11 power.

12 2. The helmet as claimed in claim 1, wherein the controller comprises:
13 a microprocessor connected to an external memory;
14 an RF receiver received the tire status signal from the at least one tire
15 status detector and connected to the microprocessor, wherein the RF receiver
16 outputs the tire status signal to the microprocessor;
17 an alarm circuit connected to the microprocessor; and
18 a driver connected between the microprocessor and the projector.

19 3. The helmet as claimed as claim 2, wherein the controller further
20 comprises an enabling switch mounted in the body and connected to the
21 microprocessor to detect whether a rider worn the helmet.

22 4. The helmet as claimed as claim 2, wherein the controller further
23 comprises a face guard sensor switch mounted on the opening and connected to
24 the microprocessor to detect whether the face guard covers completely.

1 5. The helmet as claimed as claim 3, wherein the controller further
2 comprises a face guard sensor switch mounted on the opening and connected to
3 the microprocessor to detect whether the face guard covers completely.

4 6. The helmet as claimed as claim 2, wherein the controller further
5 comprises a power detecting unit connected between the microprocessor and the
6 power circuit.

7 7. The helmet as claimed as claim 6, wherein the power detecting unit is
8 an analog to digital converter (ADC).

9 8. The helmet as claimed as claim 6, wherein the power detecting unit is
10 a comparator.

11 9. The helmet as claimed as claim 7, wherein the microprocessor
12 comprises has a receiving tire status signal means and a determining abnormal
13 tire status signal means.

14 10. The helmet as claimed as claim 9, wherein the receiving tire status
15 signal means comprises steps of

16 (a) detecting whether the enabling switch turns on, wherein if the
17 enabling switch turns on executing the next step and if the enabling turns off,
18 detecting the enabling switch until the enabling switch turns on;

19 (b) detecting whether the face guard sensor switch turns on, wherein if
20 the face guard sensor switch turns on, executing the next step and if the face
21 guard sensor turns off, alarming or display specific alarm symbol and keep
22 detecting the face guard sensor switch until the face guard sensor switch turns
23 on;

24 (c) detecting whether the power circuit is in low power state, wherein if

1 yes alarming or display specific alarm symbol and if not, executing the next step;
2 (d) receiving the tire status signals from the front and rear tire status
3 sensors;
4 (e) reading at least one preset tire parameter corresponding to the at least
5 one tire status signal;
6 (f) executing the determining abnormal tire status signal means; and
7 (g) determining whether the at least one tire status signal is abnormal,
8 wherein if yes, alarming or display alarming symbols and storing the abnormal
9 tire status signals in the memory and if not, display the current tire status values
10 on the face guard.

11 11. The helmet as claimed as claim 9, wherein the determining abnormal
12 tire status signal means comprises steps of
13 (a) calculating a largest pressure value which is equal to the presetting
14 pressure value multiplied x%;
15 (b) calculating a least pressure value which is equal to the presetting
16 pressure value multiplied y%, wherein the x is larger than y;
17 (c) comparing the current tire pressure signal with the largest pressure
18 value to determine whether the current tire pressure signal is larger than the
19 largest pressure value; if yes, the current tire pressure signal is abnormal; if not,
20 executing the next step;
21 (d) comparing the current tire pressure signal with the least pressure
22 value to determine whether the current tire pressure signal is less than the least
23 pressure value, wherein if yes, the current tire pressure signal is abnormal and if
24 not, executing the next step; and

1 (e) the current tire pressure signal is normal.

2 12. The helmet as claimed as claim 10, wherein the determining

3 abnormal tire status signal means comprises steps of

4 (a) calculating a largest pressure value which is equal to the presetting
5 pressure value multiplied x%;

6 (b) calculating a least pressure value which is equal to the presetting
7 pressure value multiplied y%, wherein the x is larger than y;

8 (c) comparing the current tire pressure signal with the largest pressure
9 value to determine whether the current tire pressure signal is larger than the
10 largest pressure value; if yes, the current tire pressure signal is abnormal; if not,
11 executing the next step;

12 (d) comparing the current tire pressure signal with the least pressure
13 value to determine whether the current tire pressure signal is less than the least
14 pressure value, wherein if yes, the current tire pressure signal is abnormal and if
15 not, executing the next step; and

16 (e) the current tire pressure signal is normal.

17 13. The helmet as claimed as claim 5, wherein the enabling switch and
18 the face guard sensor are photocouplers.

19 14. The helmet as claimed as claim 5, wherein the enabling switch and
20 the face guard sensor are mechanical switches

21 15. The helmet as claimed as claim 5, wherein the enabling switch and
22 the face guard sensor are pressure switches.